

TEXAS MANUFACTURING

Texas has an extraordinary manufacturing economy. The state's resources make it a natural leader in petroleum and chemical manufacturing; its research institutions have fostered computer-related and other high-tech manufacturing; and a business-friendly environment and skilled labor have helped create a burgeoning automotive manufacturing sector.

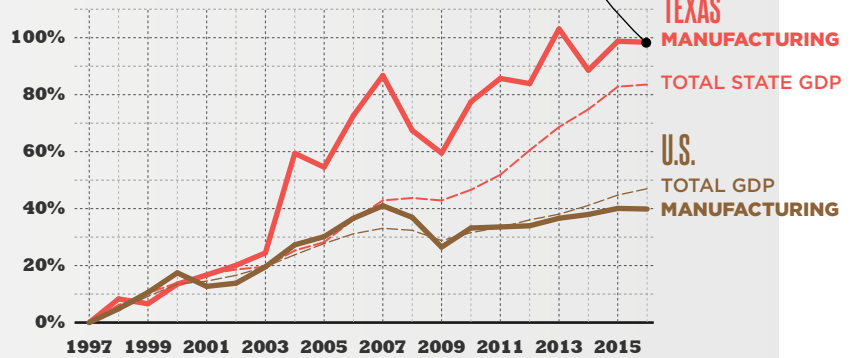
IN ALL, MANUFACTURING CONTRIBUTED \$226 BILLION TO TEXAS' GROSS DOMESTIC PRODUCT (GDP) in 2016, an amount larger than the entire economy of Portugal.



Glenn Hegar

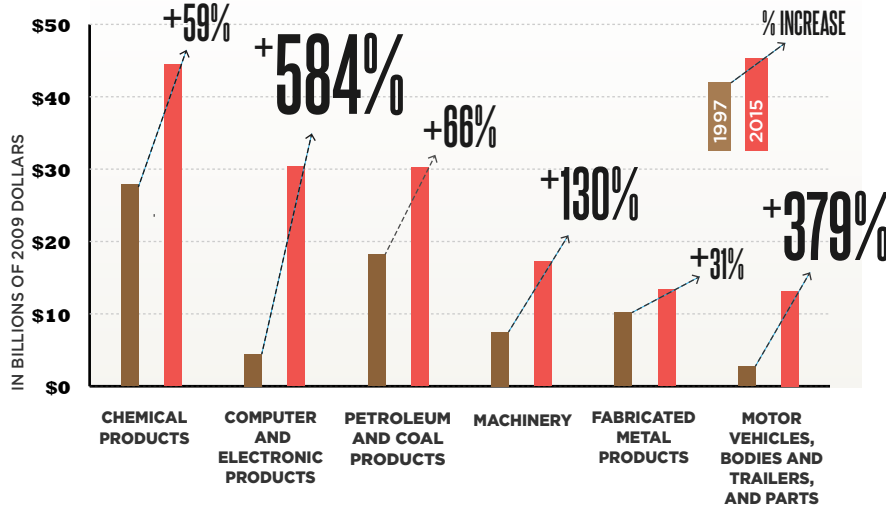
Texas Comptroller of Public Accounts

PERCENT CHANGE IN REAL GROSS DOMESTIC PRODUCT / 1997-2016



Sources: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics

LARGEST MANUFACTURING SUBSECTORS IN TEXAS BY GDP: GROWTH FROM 1997 TO 2015



Sources: U.S. Bureau of Economic Analysis, Texas Comptroller of Public Accounts

TEXAS MANUFACTURING OUTPUT HAS OUTPACED THE TOTAL TEXAS ECONOMY.

TEXAS MANUFACTURING ACCOUNTED FOR 10.4 PERCENT OF U.S. MANUFACTURING GDP IN 2016.

From 1997 through 2016, growth in Texas manufacturers' economic output more than doubled U.S. manufacturing gains of 40 percent.

BETWEEN 1997 AND 2016, MANUFACTURING REAL GDP INCREASED 98 PERCENT, COMPARED WITH AN 84 PERCENT GAIN ACROSS ALL TEXAS INDUSTRIES.

Sources: U.S. Bureau of Economic Analysis, Texas Comptroller of Public Accounts

3,000,000
DIRECT & INDIRECT EMPLOYMENT

\$225.8 Billion
TEXAS MANUFACTURING GDP

\$73,738
AVERAGE ANNUAL WAGE

\$210.3 Billion
EXPORTS

While Texas' manufacturing employment has diminished as a result of automation, technological advances and other factors, its economic output has increased. From 1997 through 2016, Texas' manufacturing job count fell by 19 percent, but its real GDP rose by 98 percent. Texas has **858,000 DIRECT MANUFACTURING JOBS**, as well as another **2.2 MILLION JOBS** indirectly created or supported by manufacturers. In 2016, average annual Texas wages in manufacturing approached **\$74,000**, much higher than the statewide average of \$54,000.

To see more in-depth Texas manufacturing data, visit:

comptroller.texas.gov/economy/economic-data/manufacturing/

Sources: U.S. Bureau of Economic Analysis, Regional Economic Models, Inc., Emsi, U.S. Department of Commerce International Trade Administration

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NONMETALLIC MINERAL PRODUCT MANUFACTURING

Using minerals such as sand, stone, clay and refractory materials (substances that can withstand high temperatures), this subsector manufactures a variety of products – heavy construction components, glass, clay and ceramic tiles and household accessories. In Texas, this subsector's employment rose by 30 percent in the 1990s, peaking at 45,100 jobs in 2001. Its job count declined following the Great Recession in 2008 but has recovered slightly since, and remains nearly 9 percent above 1990 levels.

78,200
DIRECT & INDIRECT EMPLOYMENT

\$5.3 Billion
STATE SUBSECTOR GDP

\$58,000
AVERAGE ANNUAL WAGE

\$765 Million
EXPORTS

Sources: U.S. Bureau of Economic Analysis, Regional Economic Models, Inc., Emsi, U.S. Department of Commerce International Trade Administration

INDUSTRIES IN SUBSECTOR ENJOY COMPETITIVE ADVANTAGE IN TEXAS

This subsector's share of employment is higher than the national average in many regions of Texas, as gauged by the location quotient (LQ), a measure comparing an industry's share of jobs in a specified region with its share of nationwide employment. A high LQ suggests a competitive advantage and the existence of a regional industry cluster, a group of interrelated firms in an area that provide related products or services and share similar needs for workers and suppliers.

	DIRECT JOBS 2016	JOB CHANGE 2010-2016	AVERAGE TEXAS SALARIES 2016	LOCATION QUOTIENT 2016
SUBSECTOR TOTALS	37,586	14.1%	\$57,956	1.12
CLAY PRODUCT AND REFRACTORY*	5,102	4.3%	\$55,709	1.56
GLASS AND GLASS PRODUCT	3,579	17.4%	\$57,556	0.51
CEMENT AND CONCRETE PRODUCT	21,426	18.5%	\$60,245	1.37
LIME AND GYPSUM PRODUCT	1,302	-0.9%	\$60,835	1.09
OTHER NONMETALLIC MINERAL PRODUCT*	6,176	10.2%	\$51,479	0.98

*advanced industry

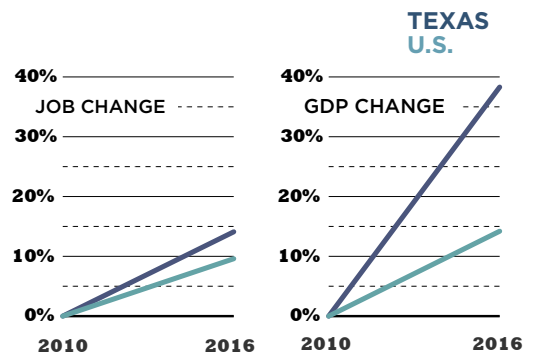
Source: Emsi

THIS SUBSECTOR INCLUDES "ADVANCED INDUSTRIES," MEANING THEIR R&D SPENDING IS IN THE TOP 20 PERCENT OF ALL INDUSTRIES AND THEIR SHARE OF STEM WORKERS EXCEEDS THE NATIONAL AVERAGE.

Source: Brookings Institution

TEXAS SUBSECTOR OUTPERFORMS NATIONAL TRENDS

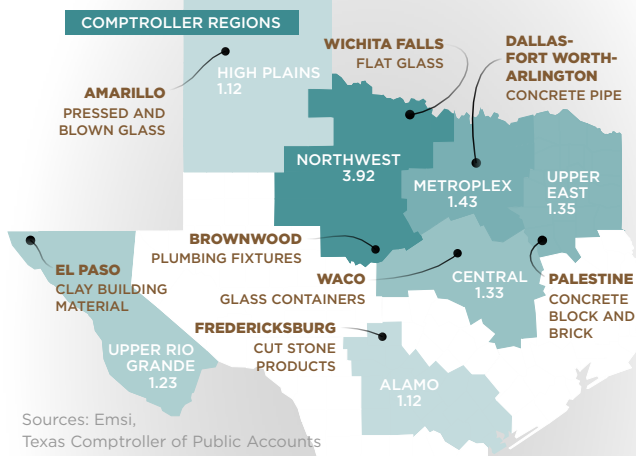
This Texas subsector pays higher average wages than the national average for the subsector, and its GDP and job growth have outpaced U.S. averages since 2010.



Sources: Emsi, U.S. Bureau of Economic Analysis, Texas Comptroller of Public Accounts

The Northwest region had the highest LQ value of 3.92, meaning the share of jobs in the region is nearly four times higher than the national average.

REGIONAL SUBSECTOR LQs AND AREAS OF INDUSTRY SPECIALIZATION BY METRO AREA



Sources: Emsi, Texas Comptroller of Public Accounts

CONCLUSION

Manufacturing continues to drive output and productivity in the Texas economy, creating jobs paying well above the statewide average. It also contributes significantly to job creation in other industries, particularly in services.

Texas average wages for jobs in nonmetallic mineral products were nearly \$58,000 in 2016, exceeding the subsector's U.S. average wage of \$56,000. And since 2010, subsector job growth and GDP have outperformed national gains. Its employment is concentrated in regions throughout Texas, and its state employment share is 12 percent higher than the U.S. average.

To see more in-depth Texas manufacturing data, visit:

comptroller.texas.gov/economy/economic-data/manufacturing/

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